

Inventor : Dong  
Serial No. : 10/629,261  
Filed : 07/28/2003  
Page : 25

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### REMARKS

Applicant expressly reserves the right to reclaim any subject matter cancelled or removed from consideration by the foregoing amendments by reintroducing said subject matter in the present application and/or by filing a subsequent application.

In the instant Office Action, claims 1-16 and 19 are listed as pending, claims 6, 9, and 12-16 are listed as withdrawn from consideration, and claims 1-5, 7, 8, 10, 11 and 19 are listed as rejected.

#### I. Request for Correction of Status of Claims 9, 15, and 16

Applicant notes claims 9, 15, and 16 were erroneously designated as "withdrawn from consideration" in the Instant Office Action. In Applicant's Revised Reply to Restriction Requirement filed August 25, 2005, ("Revised Reply"), (reiterating observations and amendments submitted in Applicant's Reply to Restriction Requirement filed August 1, 2005, which was filed in response to a Restriction Requirement mailed April 5, 2005 (the "Restriction")), only claims 6, 12, 13, and 14 were withdrawn from consideration. Claims 9, 15, and 16 were amended in said Revised Reply expressly in response to the Restriction. See in said Revised Reply: (a) pages 7, 9, and 25, in which claims 9, 15, and 16, respectively, are designated as "currently amended"; (b) page 28, first paragraph, sentences 3-4; (c) page 29, lines 7-8 ("The Examiner notes ..."); and (d) page 30, paragraphs 1, 2 (especially sentences 3-6 therein), and 3.

It seems likely that the oversight with respect to the status of these claims may have stemmed from the fact that, as noted in the Revised Reply, the Restriction did not group these claims. Rather in their original form they comprised subject matter falling within both Group I and Group II, an inconsistency that was cured by the amendments submitted in the Revised Reply. Applicant respectfully requests correction of the record with respect to the status of claims 9, 15, and 16, and examination of same.

#### II. Rejection of Claim 1 under the judicially created doctrine of obviousness-type double patenting over U.S. Patent No. 6,903,186 and over co-pending U.S. Patent Application No. 11/145,782.

In the Instant Office Action, at page 2 thereof, the Examiner has rejected claim 1 of the Instant Application under the judicially created doctrine of obviousness-type double patenting over (i) claim 1 of U.S. Patent No. 6,903,186 (the "'186 Patent"), and (ii) claim 10 of co-pending U.S. Patent Application No. 11/145,782 (" '782 Application"). Applicant respectfully traverses this rejection.

Applicant notes that both claim 1 of the '186 Patent and claim 10 of the '782 Application are drawn to the same compound, (Aib<sup>8, 35</sup>)hGLP-1(7-36)NH<sub>2</sub>, and that said compound fell within the scope of claim 1 prior to entry of the Instant Amendments. Applicant also notes that although the rejection is couched in terms of obvious-type double patenting, in fact no specific allegation whatsoever is provided with respect to obviousness. Rather the entirety of the reasoning in support of this rejection comprises the following statement, found in the Instant Office Action at page 2, lines 11-12:

"Although the conflicting claims are not identical, they are not patentably distinct from each other."

In the absence of any specific allegation concerning how claim 1 of the '186 Patent and claim 10 of the '782 Application are being applied to consideration of claim 1 of the Instant Application, Applicant is left to surmise that the obvious-type double patenting rejection is based solely on the Examiner's implicit allegation that (Aib<sup>8, 35</sup>)hGLP-1(7-36)NH<sub>2</sub> falls within the scope of claim 1 of the Instant Application.

Without conceding the correctness of this rejection, and solely in order to expedite prosecution of the Instant Application toward allowance, Applicant has (a) amended claim 1 of the Instant Application such that (Aib<sup>8, 35</sup>)hGLP-1(7-36)NH<sub>2</sub> is explicitly removed from its scope, (see proviso (viii) of claim 1 of the Instant Amendments); and (b) canceled claim 10 of said '782 Application by filing an amendment in said '782 Application concurrently herewith.

Accordingly, the rejection of claim 1 of the Instant Application under the judicially created doctrine of obviousness-type double patenting over claim 1 of U.S. Patent No. 6,903,186 and over claim 10 of co-pending U.S. Patent Application No. 11/145,782 has been obviated. Withdrawal of this rejection is respectfully requested.

III. Rejection of claims 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, first paragraph.

In the Instant Office Action, beginning at the last line of page 2 thereof, the Examiner has rejected claims 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant respectfully traverses this rejection.

More particularly, although the Examiner acknowledges at page 3 of the Instant Office Action, third paragraph, that a procedure is provided in the Instant Application for assaying a compound's ability to competitively bind to the GLP-1 receptor, nevertheless the Examiner alleges that:

[...] no result was given for this assay, and so there is no basis for concluding that **the peptide of SEQ ID No:2** exhibits any capacity to bind to the GLP-1 receptor. It may well be the case that other analogs of GLP-1 bind to the GLP-1 receptor, but structure/activity relationships are unpredictable; i.e., one cannot predict GLP receptor binding merely by viewing the structure of a compound. Accordingly, "undue experimentation" would be required to use **the compound of claim 10** to displace (<sup>125</sup>I)GLP-1(7-36) from RIN 5F rat insulinoma cells expressing the GLP-1 receptor. (emphasis added)

Applicant respectfully submits that the foregoing allegation does not provide a sufficient basis for rejecting claims 1-5, 7, 8, 10, 11 and 19 (nor claims 9, 15, and 16) under 35 U.S.C. §112, first paragraph.

First, Applicant respectfully reminds the Examiner that the peptide of SEQ ID No:2, (Aib<sup>8,35</sup>)hGLP-1(7-36)NH<sub>2</sub>, is not recited in any of claims 1-5, 7, 8, 10, 11 or 19, either before or after entry of the Instant Amendments. As such there is no basis for the Examiner's reference to the peptide of SEQ ID No:2 with respect to the rejection of 1-5, 7, 8, 10, 11 and 19. Moreover, to the extent that claim 1 (and some claims dependent thereon) may have generically encompassed the peptide of SEQ ID No:2 prior to entry of the Instant Amendments, as discussed in section II., *supra*, such is no longer the case.

Second, in addition to the peptide of SEQ ID No:2 the Examiner also makes reference to "the compound of claim 10". However Applicant respectfully directs the Examiner's attention to the text of claim 10 which recites not one but five peptides. It is not apparent whether and which peptide of claim 10 the Examiner had intended to refer, or whether the Examiner had intended to

refer instead to the peptide of claim 19 (which is drawn to a single compound). Applicant respectfully requests clarification of this rejection if it is again put forth in a future office action.

Third, and regardless of which claimed compound was intended to have been selected by the Examiner in order to illustrate the above argument, the Examiner has not indicated precisely what aspect of the claimed invention has not been "described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use." To the contrary, the Instant Application provides ample description of how the claimed compounds may be made. (See, e.g., the specification at: p.13, line 9 to p.14, line 26 (description of peptide synthesis procedure); p.15, line 18 to p.16, line 3 (preparation of peptide salts); p.18, line 21 to p.25, line 30 (specific preparation of the compounds of examples 1-14); p.26, line 7 to p.27, line 22 (specific preparation of the compounds of examples 366-369); and p.27, lines 23-24 (disclosing that the foregoing synthetic procedures may be used to synthesize the remaining examples explicitly disclosed in the specification).)

Similarly with respect to the Examiner's allegation that " 'undue experimentation' would be required to use [a claimed compound] to displace (<sup>125</sup>I)GLP-1(7-36) from RIN 5F rat insulinoma cells expressing the GLP-1 receptor", i.e., to employ a compound of the invention in the GLP-1 receptor binding assay disclosed in the application, the Examiner has not indicated what aspect of the assay would require undue experimentation on the part of a skilled practitioner in order to successfully carry it out. To the contrary, Applicant respectfully submits that the skilled practitioner would view the performance of an *in vitro* assay of the type disclosed in the Instant Application, even if with respect to a great many compounds, to comprise no more than a routine part of normal pharmaceutical research.

Thus to the extent that the rejection of 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, first paragraph, is based upon the notion that the claims encompass subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use, said rejection has been obviated. Accordingly Applicant respectfully requests that this rejection be withdrawn.

IV. Rejection of claims 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph.

In the Instant Office Action, beginning at the paragraph bridging pages 3-4, the Examiner has rejected claims 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular the Examiner raises six specific points of alleged ambiguity with respect to either claim 1 or claim 4. Each of the points are addressed *seriatim*, below.

(1) It is alleged that the meaning of "X<sup>1</sup>-Phe" in claim 1 is unclear. Specifically, the Examiner inquires whether X<sup>1</sup> is bonded to the aryl group or to the *alpha*-amino group of the phenylalanine residue.

Applicant respectfully submits that a person of skill in the art would immediately understand the term "X<sup>1</sup>-Phe" to indicate that the X<sup>1</sup> group is attached to the aryl group and not to the *alpha*-amino group. More particularly, Applicant notes that the Instant Application makes it clear when substituents attached to the *alpha*-amino group; i.e., that the attachment of said substituent to said *alpha*-amino group is explicitly provided. Applicant directs the Examiner's attention to following passages of the specification and claims, in which emphasis has been added:

- specification, page 10, lines 17-19: "With the exception of the N-terminal amino acid, all abbreviations (e.g. Ala) of amino acids in this disclosure stand for the structure of -NH-CH(R)-CO-, wherein R is the side chain of an amino acid (e.g., CH<sub>3</sub> for Ala)", (emphasis added;
- specification, page 10, lines 27-28: "... N-Me-Ala is N-methyl-alanine; N-Me-Gly is N-methyl-glycine; N-Me-Glu is N-methyl-glutamic acid; ..."
- claim 1, definitions of A<sup>8</sup> and A<sup>9</sup>, (and corresponding text in specification), which include, *inter alia*, N-Me-Ala, N-Me-D-Ala, N-Me-Gly, N-Me-Glu, and N-Me-Asp; see also definitions of A<sup>8</sup> and A<sup>9</sup> in dependent claims 3, 4;
- claim 1, original proviso (iv)(d) (corresponding to proviso (vi)(d) of Instant Amendments) (and corresponding text in specification): "... (Tyr<sup>7</sup>), (N-acyl-His<sup>7</sup>), (N-alkyl-His<sup>7</sup>), (N-acyl-D-His<sup>7</sup>) or (N-alkyl-D-His<sup>7</sup>)"; and



- claim 1, original proviso (vi) (corresponding to proviso (viii) of Instant Amendments) (and corresponding text in specification): "a compound of formula (I) is not (N-Me-Ala<sup>8</sup>)hGLP-1(8-36 or -37), ...".

Thus in the context of the disclosure of Instant Application a person of skill in the art would not view the term "X<sup>1</sup>-Phe" to refer to the situation wherein the X<sup>1</sup> group is attached to the *alpha*-amino group, but rather to the situation wherein the X<sup>1</sup> group is attached to the aryl group of a Phe residue. Accordingly, to the extent that the rejection of 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph, is based upon the presence of the term "X<sup>1</sup>-Phe", said rejection cannot be maintained. Applicant respectfully requests that this rejection be withdrawn.

(2) It is alleged that the notation "N<sub>M</sub>", which appears in the certain analogs of the claims, e.g., Lys<sup>26,34</sup>-bis(N<sub>M</sub>-alkanoyl))hGLP-1, is undefined, therefore unclear. Applicant notes that the Examiner correctly surmises that the intended character for the subscript "M" is the Greek letter epsilon, as this is the notation employed in the application as-filed.

On information and belief, Applicant's representative notes that the subscript "M" character was unintentionally introduced into the claims when Applicant submitted the Reply to Restriction Requirement on August 1, 2005.

Applicant has corrected this unintentional error in the Instant Amendments. Accordingly, to the extent that the rejection of 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph, is based upon the presence of the subscript "M" character, said rejection has been obviated by the Instant Amendments. Applicant respectfully requests that this rejection be withdrawn.

(3) Regarding part (vi) of the proviso appended to claim 1, the Examiner alleges that the notation "Z<sup>1</sup>-hGLP1(7-36, 7-37 or 7-38)-OH" is ambiguous with respect to the point of attachment of Z<sup>1</sup>. In fact consideration of part (vi) of the proviso on the whole reveals that Z<sup>1</sup> refers not to a substituent attached to the native hGLP1(7-36, 7-37 or 7-38)-OH peptide sequence but rather to one or more substitutions of amino acids from the native peptide sequence.

Notwithstanding the foregoing, without conceding the correctness of the Examiner's allegation and solely to add even further clarity to the claims, in the Instant Amendments Applicant has amended the notation "Z<sup>1</sup>-hGLP1(7-36, 7-37 or 7-38)-OH" to read "(Z)<sup>1</sup>hGLP1(7-

36, 7-37 or 7-38)-OH". Applicant notes that the amended notation is more closely aligned with the notation used throughout the application to refer to substitutions of amino acids from the native peptide sequence.

Thus to the extent that the rejection of 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph, is based upon the presence of the notation "Z<sup>1</sup>-hGLP1( ...", said rejection has been obviated by the Instant Amendments. Accordingly Applicant respectfully requests that this rejection be withdrawn.

(4) Regarding part (vii) of the proviso appended to claim 1, the Examiner seems to allege that the presence of possible redundancies concerning peptide analogs that have been excluded from the claim renders the claim impermissibly ambiguous. However Applicant notes that, although certain combinations of excluded amino acid substitutions may be redundantly stated, the Examiner has not indicated exactly how such redundancies would flummox one of skill in the art to such an extent as to cause any difficulty whatsoever in ascertaining the scope of the claim.

Importantly, the examples provided by the Examiner, e.g., the redundancy of the combination of (Arg<sup>26,34</sup>) with (Arg<sup>26</sup>), fails to appreciate that either of these two excluded selections may be combined with another excluded substitution listed in the subparagraphs of (vi). For example, either (Arg<sup>26,34</sup>) or (Arg<sup>26</sup>) may be combined with the exclusion of paragraph (vi)(b), (Asp<sup>21</sup>). The resulting excluded peptides would have different deviations from native hGLP-1 sequence; i.e., (Asp<sup>21</sup>, Arg<sup>26,34</sup>) vs. (Asp<sup>21</sup>, Arg<sup>26</sup>).

Applicant respectfully submits that the objected-to language quite clearly and succinctly communicates to the skilled practitioner the scope of the claimed subject matter. Thus to the extent that the rejection of 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph, is based upon the presence of said language Application respectfully requests that this rejection be withdrawn.

(5) The Examiner notes that the definition of A22 in claim 4 contains an ambiguity with respect to second amino acid listed therein. In the Instant Amendments Applicant has corrected the typographical error that appears therein. Thus to the extent that the rejection of 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph, is based upon the presence of said

ambiguity, said rejection has been obviated by the Instant Amendments. Accordingly Applicant respectfully requests that this rejection be withdrawn.

(6) The Examiner notes that the limitation in claim 1 that excludes the N-terminal histidine from being alkylated or acylated is superfluous in view of limitation that both R<sup>2</sup> and R<sup>3</sup> be hydrogen. In the Instant Amendments Applicant has deleted the superfluous limitation. Thus to the extent that the rejection of 1-5, 7, 8, 10, 11 and 19 under 35 U.S.C. §112, second paragraph, is based upon the presence of said superfluous limitation, said rejection has been obviated by the Instant Amendments. Accordingly Applicant respectfully requests that this rejection be withdrawn.

IV. Rejection of claims 1 and 2 under 35 U.S.C. §102(b) over US Pat. No. 5,545,618 to Buckley.

The Examiner alleges that US Pat. No. 5,545,618 to Buckley ("Buckley") discloses the sequence for native GLP-1(7-34) and GLP-1(7-35). The Examiner further alleges that GLP-1(7-34) and GLP-1(7-35) are encompassed by claim 1. Applicant respectfully traverses this rejection.

Without conceding the correctness of Examiner's allegation with respect to the teaching of Buckley, Applicant notes that in fact claim 1 does not encompass GLP-1(7-34) or GLP-1(7-35). Applicant directs the Examiner's attention to the definitions of the A<sup>7</sup>-A<sup>39</sup> of formula (I) of claim 1, in particular to A<sup>34</sup>, A<sup>35</sup>, A<sup>36</sup>, A<sup>37</sup>, A<sup>38</sup> and A<sup>39</sup>. As the Examiner will appreciate, while each of A<sup>8</sup>, A<sup>36</sup>, A<sup>37</sup> and A<sup>38</sup> may be deleted from the claimed sequence, all of the remaining amino acid positions must be present, including A<sup>39</sup>. Thus even in the shortest peptide sequence encompassed by the literal scope of claim 1 an amino acid would need to be present at position 36.

Further, Applicant respectfully directs the Examiner's attention to paragraph (iii) of the proviso to claim 1, which requires that "at least one amino acid of a compound of formula (I) is not the same as the native sequence of hGLP-1(7-36, -37 or -38)NH<sub>2</sub> or hGLP-1(7-36, -37 or -38)OH". Thus to the extent that the Examiner alleges that, despite the foregoing peptide length limitation, claim 1 remains anticipated by Buckley, paragraph (iii) affirmative precludes the



conclusion that the scope of the claims may correctly be interpreted to read on GLP-1(7-34) or GLP-1(7-35).

Thus the rejection of claims 1 and 2 under 35 U.S.C. §102(b) over Buckley (US Pat. No. 5,545,618) is obviated. Accordingly Applicant respectfully requests that this rejection be withdrawn.

V. Rejection of claims 1 and 2 under 35 U.S.C. §103 over Buckley (US Pat. No. 5,545,618).

The Examiner alleges that claims 1 and 2 are unpatentable under 35 U.S.C. §103 over Buckley. The Examiner cites to *In re Shetty* (195 USPQ 753) and *In re Hass & Susie* (60 USPQ 544) for the proposition that any peptide which contains one or more amino acids that differ from the corresponding amino acid(s) a prior art peptide are *ipso facto* obvious. More particularly, at page 7 of the Instant Office Action, first paragraph, the Examiner alleges that:

A peptide biochemist of ordinary skill would have expected, *a priori*, that when a side chain of one amino acid in a peptide is extended by one methylene unit, the biological activity of that peptide will remain substantially the same.

Applicant respectfully traverses this rejection.

As an initial matter, Applicant notes that the Examiner's reliance on *In re Shetty* and *In re Hass & Susie* is inapposite. Both of these cases concerned minor structural differences in very small molecules, which differences were strongly suggested in the prior art.

*Shetty* concerned an adamantane derivative in comprising an ethylene linker to a functional group. The claim was rejected in view of a combination of references that disclosed, *inter alia*, (i) a prior art compound which disclosed an identical compound albeit with a methylene linker, and (ii) other adamantane derivatives which comprised lower alkylene links. Significantly, the *Shetty* court specifically noted that:

"appellant's compound closest to the prior art and its synthetic preparation are disclosed in [a prior art reference] as one of a group of compounds for producing his adamantyl sulfonamide. This leaves no room for doubt that the prior art knowledge renders appellant's compound structurally similar and provides sufficient motivation to make it." (566 F.2d 81, 86) (emphasis added).

*In re Hass* concerned an even simpler molecule, 1-chloro-1-nitrobutane, and an even closer prior art disclosures: 1-chloro-1-nitroisobutane, 1-chloronitropropane, and 1-bromo-1-nitrobutane. (31 CCPA at 909 and 910).

In contrast, the compounds of the instant invention are very large, complex, biologically active polypeptides having molecular weights in excess of 3000 g/mol. Further, not only did the prior art references in *Shetty* and *Hass* disclose remarkably close analogs of the claimed compounds, the references were applied with particularity with respect to the claims then under consideration. In the Instant Office Action the Examiner paints with an exceptionally broad brush, alleging in effect that once a native peptide sequence is known, not only are all possible homologous amino acid substitutions necessarily also disclosed, but further that one of skill in the art would necessarily be motivated to "select" and make all such homologous peptides.

However the CAFC has required that an obviousness rejection under 35 USC §103 be supported by more than just a bald assertion of generalities. Rather some suggestion must be found in the prior art to create the claimed invention:

“[A] proper analysis under §103 requires, inter alia, consideration of . . . whether the prior art would have *suggested to those of ordinary skill in the art that they should make the claimed composition* or device, or carry out the claimed invention”;

In re Vaeck, 947 F.2d 488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991) (emphasis added).

The Examiner has cited no prior art which would support such a suggestion in this case, i.e., that one of ordinary skill in the art should produce the compounds claimed in the Instant Application. Additionally, the Examiner has not indicated with any particularity what aspect of current claims 1 and 2 are considered to be objectionable. As such the Examiner has failed to provide a prima facie case of obvious.

Thus the rejection of claims 1 and 2 under 35 U.S.C. §103 over Buckley is obviated. Accordingly Applicant respectfully requests that this rejection be withdrawn.

#### VI. Rejection of claim 1 under 35 U.S.C. §103 over U.S. Patent 6,214,547 to Kjeldsen

The Examiner has rejected claim 1 under 35 U.S.C. §103 as allegedly being obvious over the disclosure of U.S. Patent 6,214,547 to Kjeldsen ("Kjeldsen"). The Examiner alleges that Kjeldsen discloses GLP-1(7-39) and that, although Kjeldsen does not provide the amino sequence of GLP-1(7-39), such is known in the art. Applicant respectfully traverses this rejection.

As discussed, *supra*, the claims of the Instant Application are not drawn to native GLP-1 sequences (of any length). Unfortunately the Examiner has not provided any further reasoning with respect to how the teaching of Kjeldsen, either alone or in combination with any other reference (and no other prior art reference is cited), might be considered to disclose or suggest any aspect of the subject matter of claim 1, much less the invention as claimed. As such the Examiner has failed to state even a *prima facie* case of obvious.

Thus the rejection of claims 1 and 2 under 35 U.S.C. §103 over Kjeldsen is obviated. Accordingly Applicant respectfully requests that this rejection be withdrawn.

VII. Rejection of claim 1 under 35 U.S.C. §103 over International Patent Publication No. WO 98/08871 to Knudsen.

The Examiner has rejected claim 1 under 35 U.S.C. §103 as allegedly being obvious over the disclosure of WO 98/08871 to Knudsen ("Knudsen"). Applicant respectfully traverses this rejection.

However as with the earlier two rejections issued under 35 U.S.C. §103 in the Instant Office Action, the Examiner does not state with particularity what elements of claim 1 are disclosed or suggested by Knudsen, considered either alone or in combination with any other prior art reference. Indeed, once again the Examiner has failed to combine Knudsen with any other references in order to support a finding that the invention, *as claimed*, is rendered obvious thereby. Additionally, Applicant respectfully suggests that the Examiner has misunderstood the teaching of Knudsen as well as the definitions of the relevant substituents in claim 1.

The Examiner begins at page 8 of the Instant Office Action, last paragraph thereof, the observing that Knudsen discloses various GLP-1 analogs, e.g., as appear at pages 19-30 therein. The Examiner then reiterates that the term "N<sub>M</sub>" is not properly defined in the specification. (As noted above, Applicant has remedied this error by submission of the Instant Amendments.) The Examiner continues and alleges that, even if the error concerning is corrected, the rejection of claim 1 under 35 USC §103 will be maintained. (See page 9 of the Instant Office Action, top.) The Examiner reasons that:

"[f]irst, while it may be that applicants intend to exclude some GLP-1 derivatives in which a lysine amino group is acylated with an alcanoic acid, Knudsen

discloses various GLP-1 analogs in which the lysine is acylated with something other than an alkanoic acid. For example, there are several examples of lysines acylated with a carboxynonadecanoyl group; there are also examples of lysines acylated with a deoxycholic acid group. **These are not excluded.** (emphasis added)

Presumably the Examiner's chief reason for applying Knudsen to the Instant Application concerns the definition for  $R^{10}$  and  $R^{11}$  of the instant claims, which define certain alkyl, acyl, etc., groups that may be substituted onto, e.g., the lysine side chains at position  $A^{25}$ ,  $A^{26}$ ,  $A^{25}$ ,  $A^{34}$ ,  $A^{36}$ ,  $A^{37}$ ,  $A^{38}$  and  $A^{39}$  of claim 1.

Applicant respectfully suggests that the Examiner's observation with respect to the non-exclusion of carboxynonadecanoyl groups and deoxycholic groups from the scope of claim 1, while technically accurate, is not dispositive. Rather, it is not necessary to exclude these groups from the scope of claim 1 because GLP-1 analogs that contain these groups, (e.g., the analogs disclosed at p. 19-30 of Knudsen) simply do not fall within the scope of claim 1 to begin with. For ease of reference, the relevant portion of the definition of  $A^{25}$ ,  $A^{26}$  etc., and of  $R^{10}$  and  $R^{11}$  are provided below:

" $A^{25}$  is ...  $HN-CH((CH_2)_n-N(R^{10}-R^{11}))-C(O)$ , ... "; (n may be an integer from 1 - 5, inclusive); and

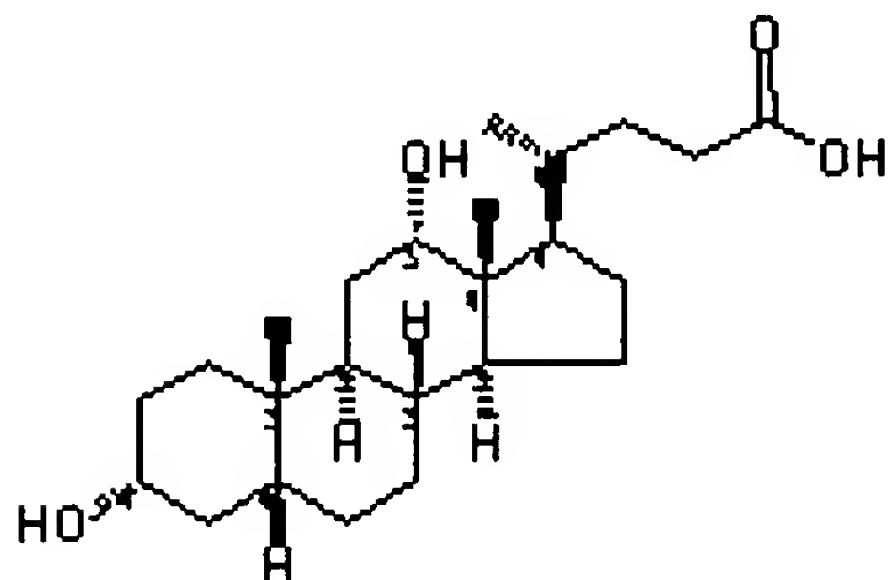
"each of  $R^{10}$  and  $R^{11}$  is, independently for each occurrence, H,  $(C_1-C_{30})$ alkyl,  $(C_1-C_{30})$ acyl,  $(C_1-C_{30})$ alkylsulfonyl,  $-C((NH)(NH_2))$  or

$$-C(O)-CH_2-N \begin{array}{c} \diagup \quad \diagdown \\ | \quad | \\ \diagdown \quad \diagup \end{array} N-(CH_2)_f-CH_3$$

; "

Thus, the definition of  $R^{10}$  and  $R^{11}$  does not accommodate GLP-1 analogs in which a substituent attached to a lysine side chain contains more than one carbonyl group, (as are present in the Knudsen analogs which comprise, e.g.,  $Lys(N^{\epsilon}-(\omega\text{-carboxynonadecanoyl}))$ ). Similarly, the definition of  $R^{10}$  and  $R^{11}$  does not accommodate GLP-1 analogs that contain lysine residues acylated with deoxycholic acid, the structure for which is as follows:

Inventor : Dong  
Serial No. : 10/629,261  
Filed : 07/28/2003  
Page : 37



Accordingly, the rejection of claims 1 and 2 under 35 U.S.C. §103 over Kjeldsen is obviated. Applicant respectfully requests that this rejection be withdrawn.

VII. Remarks regarding references previously submitted to the Patent Office.

In the final page of the Instant Office Action the Examiner states that several references listed on previously-submitted IDS's were stricken from the IDS because the references were either not submitted or were submitted without translation. Applicant notes that a Supplementary IDS addressing the Examiner's concerns was submitted to the Patent Office on November 30, 2005.



Inventor : Dong  
Serial No. : 10/629,261  
Filed : 07/28/2003  
Page : 38

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Reconsideration of the instant Office Action, entry of the amendments submitted herewith, and allowance of all pending claims are respectfully requested. Prompt and favorable action is solicited.

### CONCLUSION

Applicant submits that each ground for rejection asserted by the Examiner in the instant Office Action has been removed. On this basis, it is submitted that all pending claims as amended herein are now in a condition for allowance.

Prompt and favorable action is solicited.

Should Examiner Lukton deem that any further action be desirable with respect to these matters, he is requested to telephone the Applicant's undersigned representative.

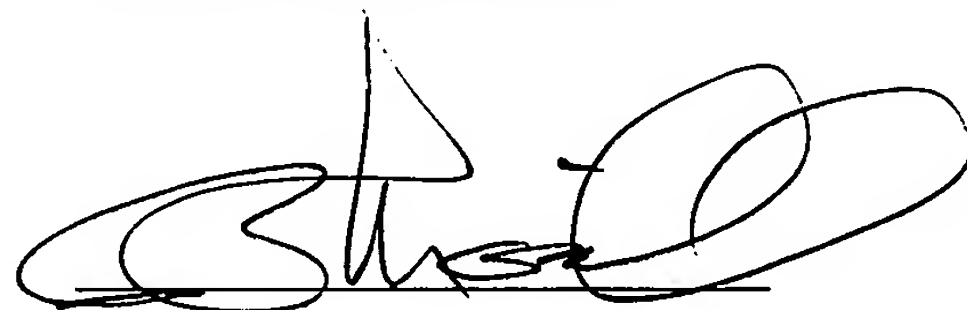
The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0590.

Respectfully submitted,

Date:

15-May-06

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